

REMARKS

Claims 1-15 are pending in the application. Claims 1-7, 11-13 and 15 are rejected. Claims 1, 4 and 6 have been canceled without prejudice or disclaimer. Claims 8-10 and 14 are considered to be allowable if placed into independent form. Claim 8 has been placed into independent form in order to secure its allowability, and that of claims 9 and 10. Claims 2, 3, 5, 7 and 11-12 have been amended to make them depend from claim 13, directly or indirectly.

Applicant respectfully submits that claim 13 is patentable, as demonstrated subsequently. Specifically, claim 13 is directed to the clearly patentable containerized refrigerant product comprising a combination of a storage cylinder and refrigerant composition having the novel and unobvious properties as disclosed and claimed. Applicant has placed the application in condition for allowance by amending the remaining claims to depend from claim 13. No new issues are raised by the cancellation or amendment of the claims, and no new search is required.

Claim Rejections - 35 U.S.C. § 102

Claims 1-7, 11-13 and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Henry (5,421,192) or Parekh (4,758,366). As to claims 1, 4 and 6 this rejection is moot in view of the cancellation of these claims. With regard to the rejection of claims 2, 3, 5, 7, 11-13 and 15, this rejection is traversed. Claims 2, 3, 5, 11 and 12 now are directed to a containerized refrigerant product as recited in claim 13.

The Examiner takes the position that each of the two references disclose (1) the claimed compositions, (2) their presence in a closed system that is viewed as a "vessel" or "cylinder," (3) their existence in a liquid phase during system use, and (4) mutual solubility during system use. Applicant respectfully submits that anticipation is improper since each limitation in the claims is not disclosed identically in either reference. Specifically, the Examiner is distorting the clear and unambiguous meaning of the term "pressurized cylinder." The references do not show a "cylinder" or similar storage vessel that contains the mixture in a static form. In other words, there is no "containerized" refrigerant product, as that term would be understood by one skilled in the art to refer to a static or storage mode. A condensation vessel is not a storage "cylinder," as that term is understood, and does not provide a containerization function, which is well known as a static storage function. Thus, the prior art would not meet that requirement since the mixture would be in motion.

Claim Rejections - 35 U.S.C. § 103

Claims 1-7, 11-13 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Henry (5,421,192) or Parekh (4,758,366). This rejection is traversed. As to claims 1, 4 and 6, the rejection is moot.

As to claims 2, 3, 5, 7, 11-13 and 15, this position is in error, as the Examiner cannot show a cylinder or vessel that contains the mixture in a static form. Neither prior art reference recognizes the problem that the Applicant has solved. The existence of the claimed composite materials in an operating system is wholly different from a static or containerized state, as the movement of the materials and their change in phase during movement is a completely different environment from the one claimed.

One of ordinary skill would not equate a static or containerized mode with a dynamic or operative mode, even one where there is no current flow, because of several significant differences between a pressurized gas in a storage vessel or cylinder and the pressurized gas in the circulatory system as a whole.

First, in the dormant circulatory system, it is less likely than in the pressurized cylinder that the dye would separate from the refrigerant since the amount of oil mixed in the system would be tens, maybe hundreds, of times greater than that of the dye. The greater the amount of lubricant mixed with the dye and gas, the easier it is to create and to maintain a uniform mixture. However, the end product would not be commercially viable or saleable in a container for reasons of being too dilute. The Applicant's claims are directed to a containerized refrigerant product having a refrigerant composition that remains uniformly mixed in the pressurized vessel without the aid of a lubricant. In practical terms, the Applicant's refrigerant composition when stored in a pressurized storage vessel would have an amount of oil in the composition that is less than the combined amount of dye solid and solvent. Neither is found in a refrigeration system.

Second, when operating, the system lubricant may be as hot as 100⁰C. In the case of a mixture of dye, gas and oil, the higher the temperature the easier it is to maintain a uniform mixture. When the system is not operating, the oil dye and gas would all separate or be very poorly mixed. The Applicant's product, as claimed, is a substantially uniformly homogenous mixture. This feature would apply throughout a wide range of temperatures, even at temperatures will below 0⁰C.


Third, in operation , the level of agitation in a closed system ensures that any local concentration, which may develop when the system is stationary, will disappear when the circulation of refrigerant commences during the normal refrigeration cycle, The Applicant's product, as claimed, remains uniformly mixed regardless of the time it is left undisturbed or dormant.

Finally, claims 1-7, 11-13 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over WO98/54150. This rejection is traversed for the reasons outlined above. Moreover, the Examiner admits a difference between the specific composition of the claimed materials and those in the reference. The Examiner alleges that the difference would be obvious. This position is improper because the Examiner has employed hindsight and for the same reasons outlined above.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


Alan J. Kasper
Registration No. 25,426

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

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APPENDIX SHOWING CHANGES

IN THE CLAIMS

Claims 1, 4 and 6 have been canceled without prejudice or disclaimer.

The claims have been amended as follows:

2. (Amended) A containerized refrigerant product [refrigerant composition] as claimed in claim 13, further comprising a refrigeration system lubricant.

3. (Amended) A containerized refrigerant product [refrigerant composition] as claimed in claim 13, wherein the refrigerant is selected from HFC, HCFC, hydrocarbons, and derivatives and mixtures thereof.

5. (Amended) A containerized refrigerant product [refrigerant composition] as claimed in claim 2, wherein the refrigeration system lubricant is selected from hydrocarbons including natural or refined mineral oils, synthetic hydrocarbons, alkylbenzenes, polyalphaolefins, synthetic polyalkylene glycols and polyolester lubricants.

7. (Amended) A containerized refrigerant product [refrigerant composition] as claimed in claim [6] 15, wherein the dye comprises from about 0.001 to about 5.0% by weight of the composition based on the weight of the dye per 100 grams of refrigerant.

8. (Amended) A [refrigerant composition as claimed in claim 2,] liquefied refrigerant composition comprising in combination a non-CFC refrigerant and a UV fluorescent dye pre-dissolved in a solvent for said dye, wherein said solvent is other than the refrigerant or a refrigeration system lubricant, whereby said refrigerant, dye and solvent comprise a uniformly homogenous composition in the liquid phase, further comprising a refrigeration system lubricant, and wherein the solvent comprises a mixture of fatty acid ethoxylate and alcohol ethoxylate.

11. (Amended) A containerized refrigerant product [refrigerant composition] as claimed in claim 13, suitable for operation in a system in a preselected mode including cooling, freezing, heating, ventilating and air conditioning.

12. (Amended) A containerized refrigerant product [refrigerant composition] as claimed in claim 11, wherein the air conditioning system is a motor vehicle air conditioning system.